



JUNIPER AP45 Hardware Networks Installation Guide

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AP45 Hardware Installation Guide

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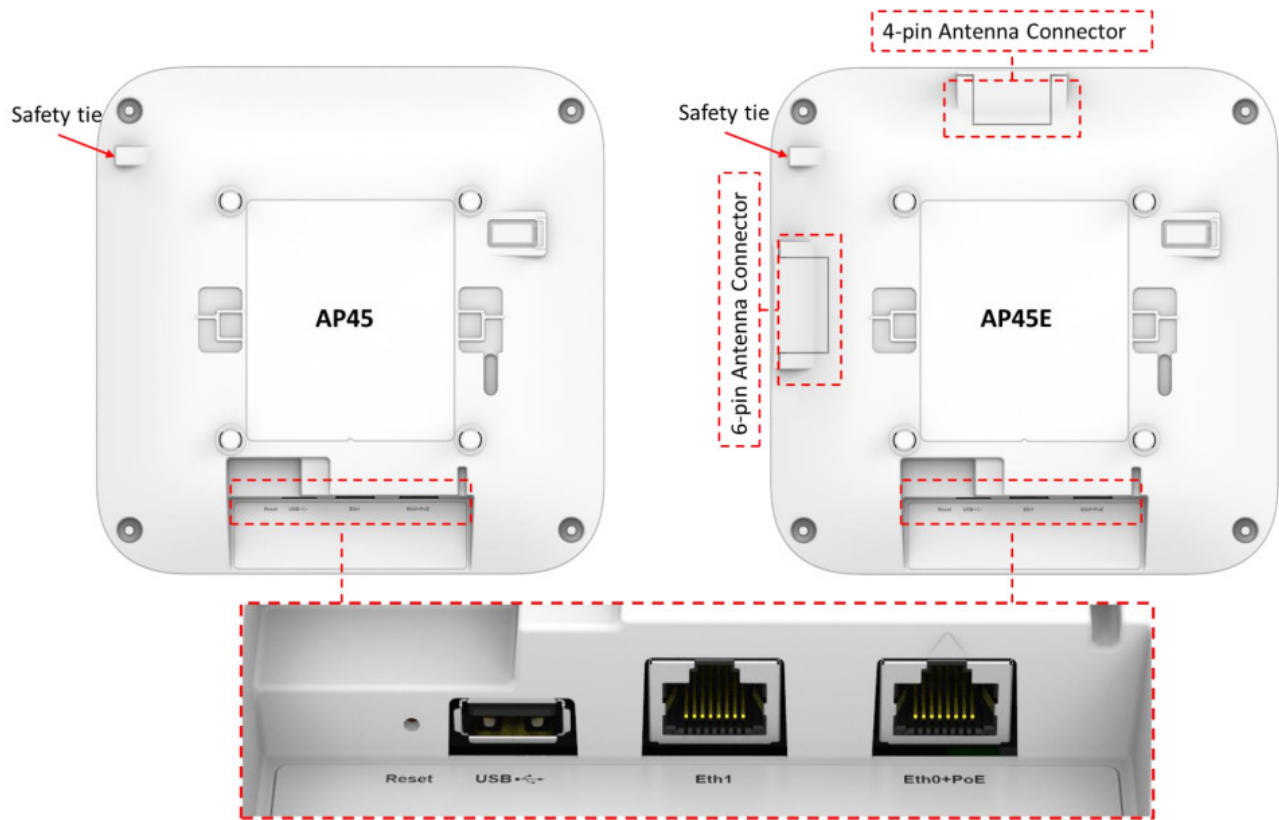
Overview

The Mist AP45 contains four IEEE 802.11ax radios that deliver 4×4 MIMO with four spatial streams when operating in multi-user (MU) or single-user (SU) mode. The AP45 is capable of operating simultaneously in the 6GHz band, 5GHz band, and 2.4GHz band along with a dedicated tri-band scan radio.

1Juniper Business Use Only

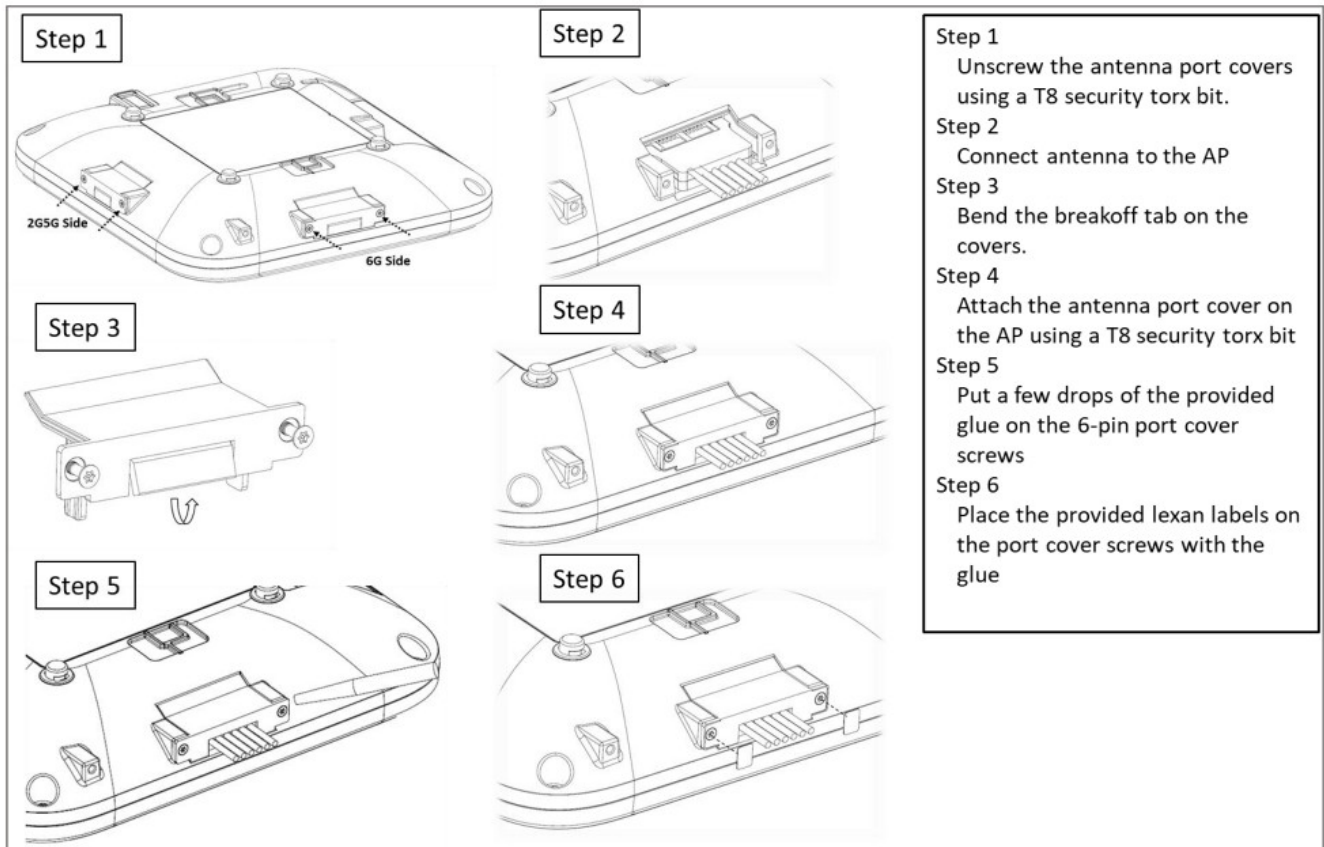
AP45 Hardware Installation Guide

I/O ports



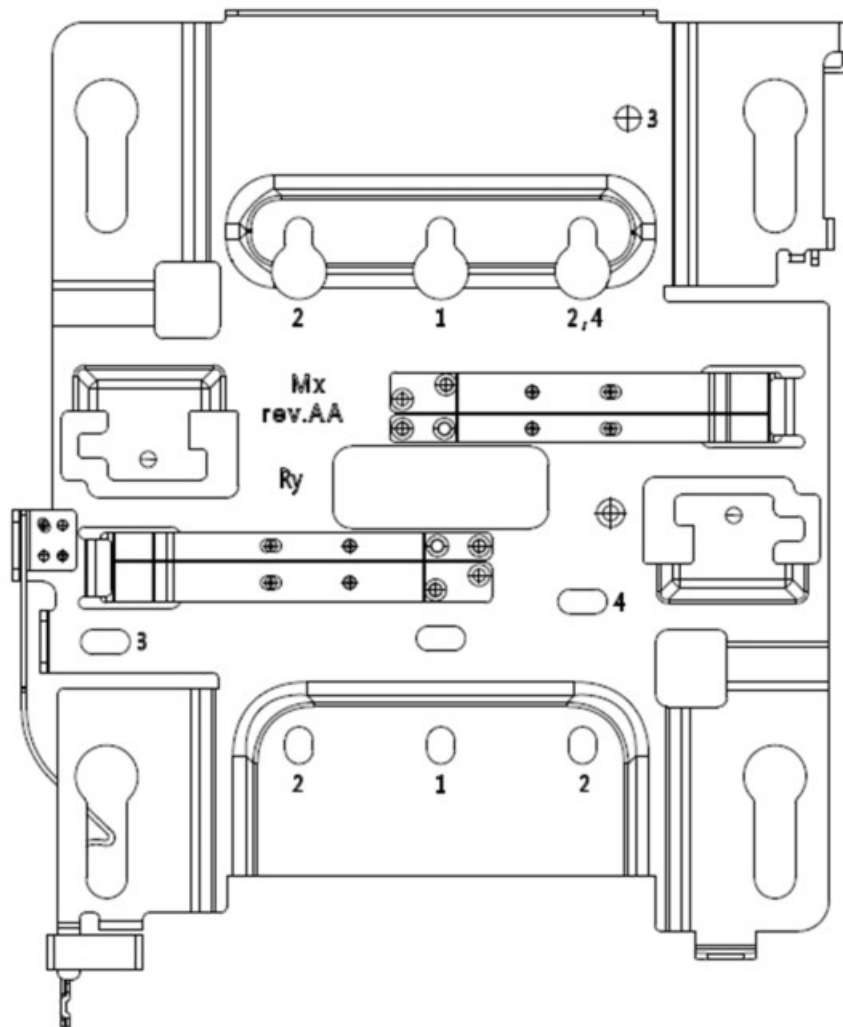
Reset	Reset to the factory default settings
Eth0+PoE-in	100/1000/2500/5000BASE-T RJ45 interface that supports 802.3at/802.3bt PoE PD
Eth1+PSE-out	10/100/1000BASE-T RJ45 interface + 802.3af PSE (if PoEin is 802.3bt)
USB	USB2.0 support interface

AP45E Antenna attachment



AP45 Mounting

APBR-U Mounting box options

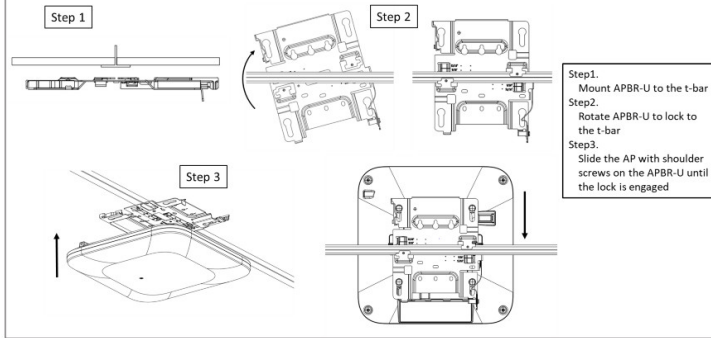


In a wall mount installation, please use screws that have a 1/4in. (6.3mm) diameter head with a length at least 2 in. (50.8mm).

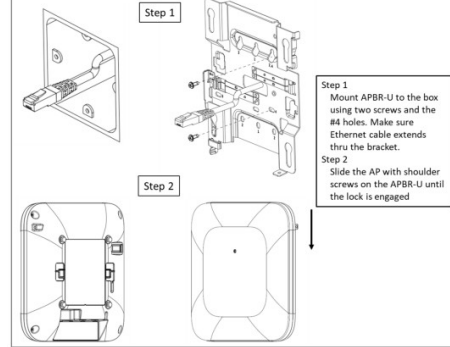
APBR-U that is in the AP45(E) box includes a set screw and an eyehook.

Holes	Mounting options
1	US Single gang, 4 inch round, 3.5 inch round
2	US Double gang, Wall/ceiling mount
3	US 4 inch square
4	EU junction box

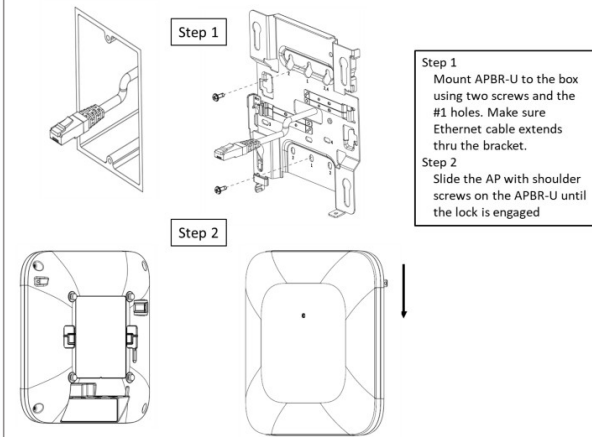
Mounting to a 9/16 inch or 15/16 inch T-bar



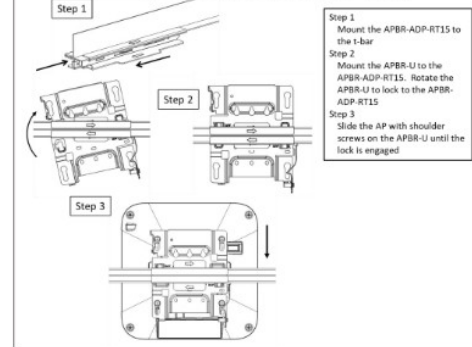
EU junction box



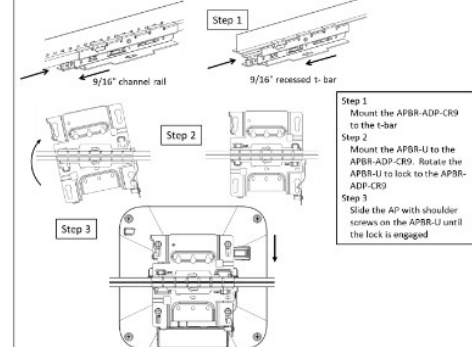
US single gang, 3.5 or 4 inch round junction box



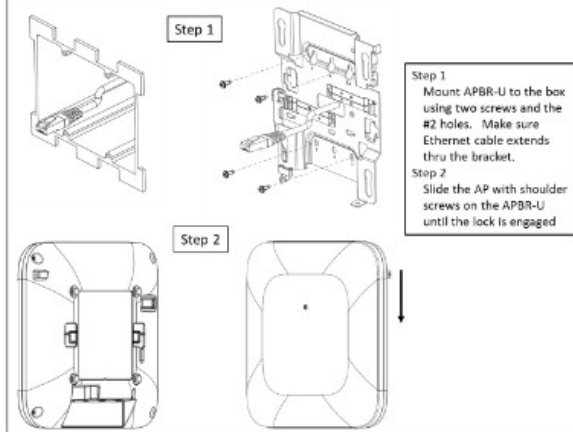
Recessed 15/16 inch T-bar



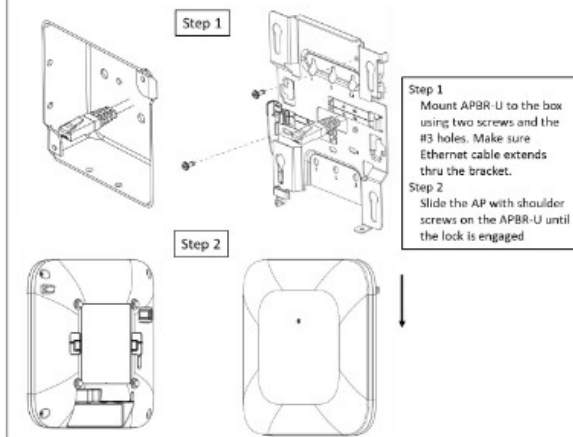
Recessed 9/16 inch T-bar or channel rail



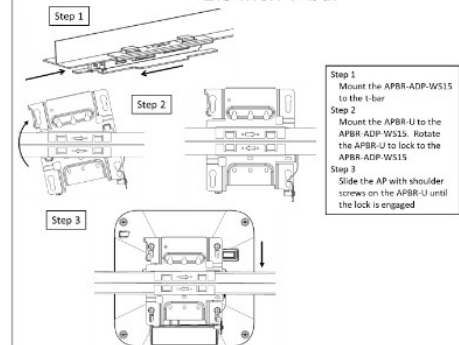
US double gang junction box



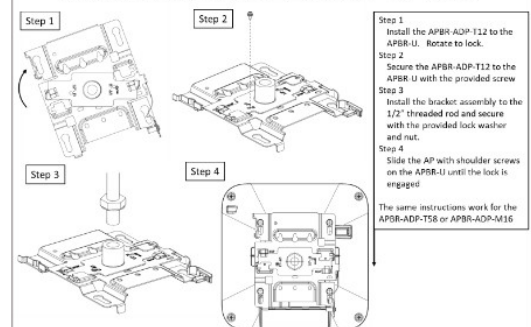
US 4 inch square junction box



1.5 inch T-bar



Threaded rod adapter (1/2", 5/8", or M16)



Technical Specifications:

Feature	Description
Power options	802.3at/802.3bt PoE
Dimensions	230mm x 230mm x 50mm (9.06in x 9.06in x 1.97in)
Weight	AP45: 1.34 kg (2.95 lbs) AP45E: 1.30 kg (2.86 lbs)
Operating temperature	AP45: 0° to 40° C AP45E: -10° to 50° C
Operating humidity	10% to 90% maximum relative humidity, non-condensing
Operating altitude	3,048m (10,000 ft)
Electromagnetic emissions	FCC Part 15 Class B
I/O	1 – 100/1000/2500/5000BASE-T auto-sensing RJ-45 with PoE 1 – 10/100/1000BASE-T auto-sensing RJ-45 USB2.0
RF	2.4GHz or 5GHz – 4x4:4SS 802.11ax MU-MIMO & SU-MIMO 5GHz – 4x4:4SS 802.11ax MU-MIMO & SU-MIMO 6GHz – 4x4: 4SS 802.11ax MU-MIMO & SU-MIMO 2.4GHz / 5GHz /6GHz scanning radio 2.4GHz BLE with Dynamic Antenna Array
Maximum PHY rate	Total maximum PHY rate – 9600 Mbps 6GHz – 4800 Mbps 5GHz – 2400 Mbps 2.4GHz or 5GHz – 1148 Mbps or 2400Mbps
Indicators	Multi-color status LED
Safety standards	UL 62368-1 CAN/CSA-C22.2 No. 62368-1-14 UL 2043 ICES-003:2020 Issue 7, Class B (Canada)

Suitable for use in environmental air space in accordance with Section 300-22(C) of the National Electrical Code, and Sections 2-128, 12-010(3), and 12-100 of the Canadian Electrical Code, Part 1, CSA C22.1.

Warranty Information

The AP45 family of Access Points comes with a limited lifetime warranty.

Ordering Information:

Access Points

AP45-US	802.11ax 6E 4+4+4 Regulatory domain	– Internal Antenna for the US
AP45E-US	802.11ax 6E 4+4+4 Regulatory domain	– External Antenna for the US
AP45-WW	802.11ax 6E 4+4+4 – Regulatory domain	Internal Antenna for the WW
AP45E-WW	802.11ax 6E 4+4+4 – Regulatory domain	External Antenna for the WW

Mounting brackets

APBR-U	Universal AP Bracket for T-Rail and Drywall mounting for Indoor Access Points
APBR-ADP-T58	Adapter for 5/8-inch threaded rod bracket
APBR-ADP-M16	Adapter for 16mm threaded rod bracket
APBR-ADP-T12	Adapter for 1/2-inch threaded rod bracket
APBR-ADP-CR9	Adapter for channel rail and recessed 9/16" t-rail
APBR-ADP-RT15	Adapter for recessed 15/16" t-rail
APBR-ADP-WS15	Adapter for recessed 1.5" t-rail

Power Supply options

802.3at or 802.3bt PoE power

Regulatory Compliance Information: This product and all interconnected equipment must be installed indoors within the same building, including the associated LAN connections as defined by the 802.3at Standard. Operations in the 5.15GHz – 5.35GHz band are restricted to indoor usage only.

If you need further assistance with purchasing the power source, please contact Juniper Networks, Inc.

FCC Requirement for Operation in the United States of America:

FCC Part 15.247, 15.407, 15.107, and 15.109 FCC Guideline for Human Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance between the radiator & your body; AP45 – 50cm and AP45E – 59cm.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the

user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- For operation within 5.15 ~ 5.25GHz / 5.47 ~ 5.725GHz / 5.925 ~ 7.125GHz frequency range, it is restricted to indoor environment.
- The 5.925 ~ 7.125GHz operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10,000 feet.

Regulatory Compliance Information:

This product and all interconnected equipment must be installed indoors within the same building, including the associated LAN connections as defined by the 802.3at

Standard. Operations in the 5.15GHz – 5.35GHz band are restricted to indoor usage only. If you need further assistance with purchasing the power source, please contact Juniper Networks, Inc.

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FCC Guideline for Human Exposure

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- For operation within 5.15 ~ 5.25GHz / 5.47 ~ 5.725GHz / 5.925 ~ 7.125GHz frequency range, it is restricted to indoor environment.
- The 5.925 ~ 7.125GHz operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10,000 feet.
- Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or Communications with unmanned aircraft systems.

Industry Canada

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This radio transmitter [22068-AP45] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Approved antenna(s) list:

Antenna	Brand Name	Model Name	Antenna Type	Equip EUT	Gain (dBi)
1	Juniper	AP45	PIFA	AP45	Notel
2	Juniper	AP45	PIFA		
3	Juniper	AP45	PIFA		
4	Juniper	AP45	PIFA		
5	Juniper	AP45	PIFA		
6	Juniper	AP45	PIFA		
7	Juniper	AP45	PIFA		
8	Juniper	AP45	PIFA		
9	Juniper	AP45	PIFA		
10	Juniper	AP45	PIFA		
11	Juniper	AP45	PIFA		
12	Juniper	AP45	PIFA		
13	Juniper	AP45	PIFA		
14	Juniper	AP45	PIFA		
15	Juniper	AP45	PIFA	AP45, AP45E	
16	AccelTex	ATS-00-2456-466-10MC-36	OMNI	AP45E	
17	AccelTex	ATS-OP-2456-81010-10MC-36	Panel		
18	AccelTex	ATS-00-2456-466-10MC-36	OMNI		
19	AccelTex	ATS-OP-2456-81010-10MC-36	Panel		

Note 1:

Ant.	Antenna Gain (dBi)																				Bluetooth (Radio 5)
	WLAN 5GHz (Radio 1)				WLAN 2.4GHz (Radio 2)	WLAN 5GHz (Radio 2)		WLAN 6GHz (Radio 3)				WLAN 2.4GHz (Radio 4)	WLAN 5GHz (Radio 4)				WLAN 6GHz (Radio 4)				
	UNII 1	UNII 2A	UNII 2C	UNII 3		UNII 1	UNII 2A	UNII 5	UNII 6	UNII 7	UNII 8		UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 5	UNII 6	UNII 7	UNII 8	
1	2.89	3.7	3.46	2.39	2.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	2.61	2.55	3.04	3.8	0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	1.94	2.2	2.82	2.54	2.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	3.27	4.06	2.87	2.17	1.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	-	-	-	-	-	3.2	3.56	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	-	-	-	-	-	2.85	3.77	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	-	-	-	-	-	3.37	3.23	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	-	-	-	-	-	3.11	3.68	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	-	-	-	-	-	-	-	4.9	5.4	5.4	5.6	-	-	-	-	-	-	-	-	-	
10	-	-	-	-	-	-	-	4.9	5.4	5.4	5.6	-	-	-	-	-	-	-	-	-	
11	-	-	-	-	-	-	-	4.9	5.4	5.4	5.6	-	-	-	-	-	-	-	-	-	
12	-	-	-	-	-	-	-	4.9	5.4	5.4	5.6	-	-	-	-	-	-	-	-	-	
13	-	-	-	-	-	-	-	-	-	-	-	5.0	5.4	5.4	5.5	5.3	4.7	4.8	4.8	4.1	
14	-	-	-	-	-	-	-	-	-	-	-	5.0	5.4	5.4	5.5	5.3	4.7	4.8	4.8	4.1	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.5	
16	6	6	6	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	10	10	10	10	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	-	-	-	-	-	-	-	6	6	6	6	4	6	6	6	6	6	6	6	-	
19	-	-	-	-	-	-	-	10	10	10	10	8	10	10	10	10	10	10	10	-	

IC Caution

- (i) The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- (ii) The maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit; (iii) The maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate; and
- (iv) Operation shall be limited to indoor use only.
- (v) Operation on oil platforms, cars, trains, boats and aircraft shall be prohibited except for on large aircraft flying above 10,000 ft.

Radiation Exposure Statement:

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 24cm (AP45), 34cm (AP45E) between the radiator & your body.

CE



Hereby, Juniper Networks, Inc. declares that the radio equipment types (AP45, AP45E) are in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following: <https://www.mist.com/support/>

The frequency and maximum transmitted Power in EU:


Bluetooth:

Frequency range (MHz)	Maximum EIRP in EU (dBm)
2400 – 2483.5	9.77

WLAN:

Frequency range (MHz)	Maximum EIRP in EU (dBm)
2400 – 2483.5	19.99
5150 – 5250	22.99
5250 – 5350	22.99
5500 – 5700	29.98
5745 – 5825	13.97
5945 – 6425	22.99

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. The device is restricted to indoor use only when operating in 5150 to 5350 MHz and 5945 to 6425MHz frequency ranges.

	AT	BE	BG	CZ	DK	EE	FR	DE	IS
	IE	IT	EL	ES	CY	LV	LI	LT	LU
	HU	MT	NL	NO	PL	PT	RO	SI	SK
	TR	FI	SE	CH	HR	UK(NI)			

UK

Hereby, Juniper Networks, Inc. declares that the radio equipment types (AP45, AP45E) are in compliance with Radio Equipment Regulations 2017.

The full text of the UK declaration of conformity is available at the following: <https://www.mist.com/support/>

The frequency and maximum transmitted Power in UK:

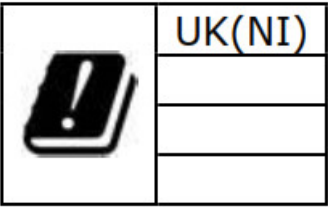
Bluetooth:

Frequency range (MHz)	Maximum EIRP in UK (dBm)
2400 – 2483.5	9.77

WLAN:

Frequency range (MHz)	Maximum EIRP in UK (dBm)
2400 – 2483.5	19.99
5150 – 5250	22.99
5250 – 5350	22.99
5500 – 5700	29.98
5745 – 5825	22.98
5925 – 6425	22.99

This equipment complies with UK radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. The device is restricted to indoor use only when operating in 5150 to 5350 MHz and 5925 to 6425MHz frequency ranges.



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Documents / Resources

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References

- [Support - Mist](#)